

Appl. No. : 10/676,543
Filed : October 1, 2003

REMARKS

The following remarks are responsive to the February 3, 2006 Office Action. Claims 4, 19, and 20 have been previously cancelled without prejudice, Claims 1, 6, 7, 13, 21, 27, 34, 39, and 40 remain as previously presented, and Claims 2-3, 5, 8-12, 14-18, 22-26, 28-33, and 35-38 remain as originally filed. Thus, Claims 1-3, 5-18, and 21-40 are presented for further consideration. Applicants gratefully acknowledge the Examiner's allowance of Claims 1-3, 5-18, 21-27, and 34-40. Please reconsider Claims 28-33 in view of the following remarks.

Response to Rejection of Claims 28 and 30-33 Under 35 U.S.C. §102(b)

In the February 3, 2006 Office Action, the Examiner rejected Claims 28 and 30-33 under 35 U.S.C. § 102(b), as being anticipated by Hall, et al., "High-stability Er^{3+} -doped Superfluorescent Fiber Sources" ("Hall").

Claim 28

Claim 28 recites (emphasis added):

28. A superfluorescent fiber source (SFS) having a mean wavelength which is stable to within approximately ± 0.5 part per million over a period of time of at least one hour.

Applicants submit that Hall does not disclose all the limitations recited by Claim 28. For example, Applicants submit that Hall does not disclose "a mean wavelength which is stable to within approximately ± 0.5 part per million over a period of time of at least one hour," as recited by Claim 28.

Hall discloses a superfluorescent source having a mean wavelength with "a short-term (1-h) peak to peak stability of ~ 3 ppm with a standard deviation of ≤ 0.9 ppm (RMS)." (Hall, p. 1458, second column). As explained in the "Declaration of Michel J.F. Digonnet Pursuant to 37 C.F.R. § 1.132" submitted herewith, Applicants submit that persons skilled in the art understand that this standard deviation expressed by Hall as the root mean square (RMS) deviation from average refers to the square root of the mean squared deviation of a data set. Thus, Hall discloses a wavelength wherein the square root of the mean squared deviation from the baseline wavelength is ≤ 0.9 ppm and that this standard deviation equates to a wavelength with a peak-to-peak stability of ~ 3 ppm.

Conversely, Claim 28 recites a superfluorescent fiber source having a stability of the mean wavelength recited as the maximum deviation of the mean wavelength from its average

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value during a specified time period. As explained in the "Declaration of Michel J.F. Dignonnet Pursuant to 37 C.F.R. § 1.132" submitted herewith, persons skilled in the art understand that a statement that the stability of the mean wavelength is "within approximately ± 0.5 part per million" over a specified time period (e.g., a period of time of at least one hour as recited by Claim 28) means that the mean wavelength remains within the range between approximately $\lambda_{\text{avg}} \times (1 - (0.5 \times 10^{-6}))$ to approximately $\lambda_{\text{avg}} \times (1 + (0.5 \times 10^{-6}))$ over the specified time period, where λ_{avg} is the average of the mean wavelength over the specified time period. Thus, such a mean wavelength would have a peak-to-peak stability of ≤ 1 ppm.

Thus, while Hall does disclose a wavelength having a peak-to-peak stability of ~ 3 ppm with a standard deviation of ≤ 0.9 ppm (RMS), Hall does not disclose "a mean wavelength which is stable to within approximately ± 0.5 part per million over a period of time of at least one hour," as recited by Claim 28. The superfluorescent source disclosed by Hall does not inherently satisfy the limitation recited by Claim 28.

Hall further discloses that "a long-term scale factor stability approaching 0.5 ppm appears feasible." (Hall, p. 1459, first column, lines 12-13, emphasis added). However, Hall notes that his measurements only show "an exceptional diode-pumped broadband SFS λ stability to better than 0.12 Å (8 ppm) for over 20h." (Hall, p. 1459, first column, lines 14-15). Thus, Hall does not disclose "a mean wavelength which is stable to within approximately ± 0.5 part per million over a period of time of at least one hour," as recited by Claim 28.

Therefore, Applicants submit that Claim 28 is not anticipated by Hall. Applicants respectfully request the Examiner to withdraw the rejection of Claim 28. Each of Claims 30 and 31 depend directly from Claim 28, Claim 32 depends from Claim 31, and Claim 33 depends from Claim 32. Therefore, Claims 30-33 are patentable for at least the same reasons that Claim 28 is patentable over the applied art. Accordingly, allowance of Claims 28 and 30-33 is respectfully requested.

Response to Rejection of Claim 29 Under 35 U.S.C. § 103(a)

In the February 3, 2006 Office Action, the Examiner rejected Claim 29 under 35 U.S.C. § 103(a) as being unpatentable over Hall. As discussed above, Applicants submit that Claim 28 is patentably distinguishable over Hall. Claim 29 depends directly from Claim 28. Therefore,

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Applicants submit that Claim 29 is patentable over Hall. Accordingly, allowance of Claim 29 is respectfully requested.

CONCLUSION

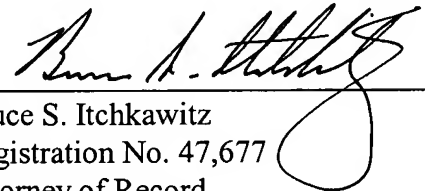
In view of the foregoing remarks, Applicants submit that Claims 1-3, 5-18 and 21-40 are in condition for allowance and Applicants respectfully request such action. Should the Examiner have any remaining concerns which might prevent the prompt allowance of the application, the Examiner is respectfully invited to contact the undersigned at the telephone number appearing below.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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